

WHAT IS CLAIMED IS:

1. A semiconductor component comprising:
a semiconductor body with a first semiconductor layer of a first conduction type and a second semiconductor layer of a second conduction type, which is applied on the first semiconductor layer and forms a front side of the semiconductor body;
in the second semiconductor layer, a first terminal zone of the second conduction type, a drift zone of the second conduction type, a channel zone of the first conduction type, which is formed between the first terminal zone and the drift zone, and a second terminal zone of the second conduction type, which is arranged at a distance from the channel zone in a lateral direction of the semiconductor body;
a first drive electrode arranged in a manner insulated from the semiconductor body and adjacent to the channel zone; and
at least one second drive electrode, which, proceeding from the front side, extends through the second semiconductor layer right into the first semiconductor layer and which is insulated from the semiconductor body.
2. The semiconductor component of claim 1 having a plurality of second drive electrodes arranged at a distance from one another.
3. The semiconductor component of claim 2, wherein the plurality of second drive electrodes are formed in pillar-type fashion.
4. The semiconductor component of claim 2, wherein the plurality of second drive electrodes are completely surrounded by an insulation layer in the semiconductor body.
5. The semiconductor component of claim 2, wherein the plurality of second drive electrodes are connected to a defined potential.

6. The semiconductor component of claim 5, wherein the plurality of second drive electrodes and the first terminal zone are connected to the same potential.
7. The semiconductor component of claim 1, wherein the first drive electrode is arranged above the front side of the semiconductor body.
8. The semiconductor component of claim 1, wherein the first drive electrode is arranged in the semiconductor body.
9. The semiconductor component of claim 1, wherein the first semiconductor layer has a more heavily doped semiconductor layer of the first conduction type at a side remote from the second semiconductor layer.
10. The semiconductor component of claim 1, wherein at least one semiconductor zone of the first conduction type is arranged in the drift zone adjacent to the at least one second drive electrode.
11. The semiconductor component of claim 10, wherein the at least one semiconductor zone is arranged in the region of the front side of the semiconductor body.
12. The semiconductor component of claim 1, wherein the at least one second drive electrode is arranged nearer to the channel zone than to the second terminal zone.
13. A semiconductor component comprising:
a semiconductor body having a first layer of a first conduction type and a second layer of a second conduction type, the second layer applied onto the first layer thereby forming a front side of the semiconductor body;

20. The semiconductor component of claim 13, wherein the first semiconductor layer has a more heavily doped semiconductor layer of the first conduction type at a side remote from the second semiconductor layer.

a first terminal zone of the second conduction type in the second layer;
a drift zone of the second conduction type in the second layer;
a channel zone of the first conduction type formed between the first terminal zone and the drift zone;
a second terminal zone of the second conduction type, wherein the second terminal zone and the channel zone are separated by a distance on the front side of the semiconductor body;
a first drive electrode insulated from the semiconductor body and adjacent the channel zone; and
a second drive electrode extending from the front side through the second layer into the first layer and insulated from the semiconductor body.

14. The semiconductor component of claim 13 having a plurality of second drive electrodes arranged at a distance from one another.

15. The semiconductor component of claim 14, wherein the plurality of second drive electrodes are formed in pillar-type fashion.

16. The semiconductor component of claim 14, wherein the plurality of second drive electrodes are completely surrounded by an insulation layer in the semiconductor body.

17. The semiconductor component of claim 14, wherein the plurality of second drive electrodes are connected to a defined potential.

18. The semiconductor component of claim 17, wherein the plurality of second drive electrodes and the first terminal zone are connected to the same potential.

19. The semiconductor component of claim 13, wherein the first drive electrode is arranged in the semiconductor body.